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REMARKS

Claims 1-20 remain pending in the present application. Applicants elected claims 1-5 and 13-15 for further prosecution in response to a restriction under 35 U.S.C. §121. Of the elected claims for further prosecution on the merits, claims 1 and 13 are the only independent claims. Claims 1 and 13 have been amended to include the requirement “wherein material composition of said seed layer is substantially the same as material composition of said impure copper fill.” Disclosure for such requirement can be found in paragraph 20 on page 5 of the specification. No new matter has been added.

Drawing Objection

Figures 1 and 2 stand objected to because Figures 1 and 2 have not been designated with a “prior art” legend. In response to the drawing objection, Applicants submit concurrently herewith replacement sheets for Figures 1 and 2 designated with the “prior art” legend.

Applicants respectfully request withdrawal of the drawing objection.

Claim Rejections – 35 U.S.C. §103

Claims 1-5 and 13-15 stand rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent Application Publication No. US 2002/0090814 to Inoue et al.

Applicants respectfully traverse the rejection for the following reasons.

Inoue is directed to a method for forming an interconnect. More specifically, Inoue is directed to an interconnect with a two metal underlying film 18. (Inoue, Fig. 1B) The underlying film 18 in Inoue requires at least one metal that is the same metal as the interconnect, i.e. copper, and at least one metal that has a higher atomic weight than the metal that is the same as the interconnects, i.e. copper. (Inoue, ¶33). The higher atomic

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weight of the second metal in the underlying film results in improved side coverage of the interconnect. (Inoue, ¶35).

Inoue does not disclose, teach, or suggest “an impure copper that fills an opening in the underlying insulating layer.” Inoue discloses a copper fill 20. In addition, Inoue does not disclose, teach, or suggest “wherein material composition of said seed layer is substantially the same as material composition of said impure copper fill” as required by Claims 1 and 13 as presently amended. If Inoue were to be modified such that the composition of the seed layer was substantially the same as the impure copper fill, Inoue would no longer achieve its desired result, namely improved side coverage, because the seed layer would no longer comprise at least one metal with the higher atomic weight than the metal fill.

Inoue does not disclose, teach or suggest a seed layer that has substantially the same material composition as the fill. Therefore, Applicants respectfully request withdrawal of the 35 U.S.C. §103 rejection applied against Claims 1-5 and 13-15.

Applicants note that the Office Action references a “memory element” as if it were a claim limitation of either independent Claim 1 or 13, but a “memory element” is not a claim limitation of either Claim 1 or 13. Applicants respectfully submit that reference to a “memory element” was in err.

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Conclusion


Applicants have properly traversed each of the grounds for rejection in the Office Action, and therefore respectfully submit that the application is in condition for allowance. Reconsideration and allowance of pending claims is respectfully requested.

If the Examiner believes a telephone discussion will aid examination and advance prosecution of the application, a telephone call to the undersigned is invited.

No fee is believed to be due for the submission of this amendment. If any fees are required, however, the Commissioner is authorized to charge such fees to Deposit Account No. 09-0458.

Respectfully Submitted,

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